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Papers Presented to Congress

No. 5.—NON-PARASITIC SKIN DISEASES OF DOGS*

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There was a surprisingly small attendance of members when the foregoing paper was discussed, very briefly indeed, by the Veterinary Medicine and Surgery Section of Congress, N.V.M.A., at the Royal (Dick) Veterinary College, Edinburgh, on the morning of Friday, August 3rd, 1934.

The session was presided over by Major A. SPREULL (Dundee) who, in opening the proceedings, said that so far the Congress had dealt with papers relating to the larger animals, but that day they were to deal with the canine and feline section.

In introducing his paper, Mr. CORMACK said he did not propose to add anything to the substance of the paper, as he had expressed elsewhere the hope that there would be a good discussion. It was certainly his intention when writing the paper to make it as provocative of discussion as possible, and he trusted that he had succeeded. He thought there ought to be a very good discussion on what was, to those engaged in small animal practice, a very important subject.

Non-parasitic diseases of the skin form quite a large number of the cases seen daily in practice amongst dogs. They are so varied in character, and many of them give rise to so much worry to the practitioner, annoyance to the owner and inconvenience to the patient, that a full discussion of the associated problems is bound to be of service to the ever-increasing number of veterinary surgeons who are consulted on canine problems. The majority of the non-parasitic skin lesions seen daily are not really skin disease *per se*, but are rather manifestations in the skin of some disorganisation of the animal system, and in order to be successfully treated must be dealt with accordingly.

ERYTHEMA, HYPERÆMIA OF THE SKIN.—Is seen as a congested condition of the skin associated with the feeling of increased temperature of the affected parts. It may be general or local, according to the cause. The skin is dry and without exudate and occasionally pruritus is present. General erythema is observed in association with febrile diseases, gastric and intestinal disorders, intoxications and auto-intoxications and functional nerve disorders and during the early stages of change of coat, as well as being the primary stage of dermatitis.

The cause of local erythema is most commonly mechanical or chemical in nature. It can be produced by any source of friction and the use of mildly irritant liniments, or bathing with unsuitable soap, in which category one includes carbolic soap, or an excessively alkaline soap, such as soft or clothes-washing soaps. Many dogs' skins are hypersensitive to soap and only the best grades should be used for their baths.

The treatment of erythema must vary according to the cause and must be general or local as the case demands. The exciting cause must be removed.

ANÆMIA OF THE SKIN.—As seen, is generally the result of anæmia following some wasting disease, as the result of great loss of blood and in shock.

Treatment according to cause.

ŒDEMA OF THE SKIN.—Is often in association with disease of the heart and must be dealt with accordingly. Inflammatory œdema is seen in the region of injuries, abscesses, etc., and calls for attention to the exciting cause with the addition of cold or warm packs.

SEBORRHŒA.—Occurs in two forms: Seborrhœa sicca, or dry, and seborrhœa oleosa, or oily. It consists of an over-activity of the sebaceous glands without obvious inflammatory symptoms and accompanied by a degree of depilation. The condition is usually seen in dogs suffering from general debility, the dry form being commonly met with in neglected cases of skin disease, particularly of mange. Comparatively small or large areas of the skin may show the symptoms which, in the case of the dry form, appear as numerous greyish, yellow, or pale brown scales consisting of dried sebaceous material. There is frequently a suggestion of transition from the oily form to the dry, in which case some of the moist sebaceous material is seen close to the skin and sticking to the hairs. In the oily form there is a larger quantity of the greyish material, which forms a layer on the skin and causes the hairs to become matted into groups. The cause is possibly to be found in the presence of some intoxication or bacterial

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infection of the glands and treatment consists of trying to correct that condition by cleansing the skin, removing the underlying cause and improving the animal's general health by suitable nourishment, with the addition of general tonics.

Local treatment must vary with the conditions. Small areas may be swabbed with spirit, followed by astringent dressings in the form of lotions or powders: for larger areas, vigorous brushing, frequent bathing, etc. Frequent bathing—about twice a week—with weak sodii carb. solution is useful, followed by the daily application of 5 per cent. glycerine in spirit, in the case of the moist form, while a larger percentage of glycerine is to be preferred in the dry form, or 25 per cent. ol. paraffin in paraffin liq.

Comedo (Blocked Sebaceous Glands).—A condition where there is retention of the gland secretion and in which the gland frequently attains the size of a pea or small bean with a cyst-like appearance.

Treatment consists of evacuation of the contents and cleansing with spirit. When secondary infections are present the cavity should be swabbed or syringed with astringent antiseptics.

Pruritus (Itch of the Skin).—May be local or general. It is a common accompaniment of diseases of the skin, but in many cases there cannot be found any evidence of a lesion, but the skin is hypersensitive and the scratch reflex is readily observed. It is often difficult to diagnose the condition underlying the symptom, and there can be little doubt that it is merely a symptom, for it is to be found in all ages and breeds of dogs, and in both well-nourished and ill-nourished specimens. It is frequently seen in dogs of the longer haired varieties, associated with a degree of dryness of the skin, a condition which responds to the administration of cod-liver oil and vigorous grooming. It is commonly observed during change of coat in all breeds, in helminthiasis, nephritis, leucæmia and some observers state that it occurs in diabetes. McKenna and Longley ascribe the cause in many cases to vitamin and mineral deficiency.[1]

Treatment consists in removal of cause where possible, cleansing the skin with repeated bathing in water containing sodii carb., vigorous brushing, soothing lotions, Ichthyol, and in special cases anæsthetic ointments.

Local pruritus of the anus, toes, local areas of the skin, particularly of the limbs and tail. Pruritus ani is usually associated with dysfunction of the anal glands, and appropriate treatment brings about recovery. Pruritus of the toes is commonly the result of the accumulation of dirt and responds to frequent washing with the application of cooling lotions. Occasionally, pruritus of the skin of the limbs and tail becomes so intense that the dog mutilates himself. It is possible that this type is due to a neuritis. In the case of the tail, it may be possible to get rid of the offending part by amputation.

Depilation.—Apart from the natural change of coat and in association with other skin disorders, one meets with cases of continuous shedding of hair without visible lesion of the skin. In such animals there frequently appears to be a superabundance of hair; in fact, one is inclined to attribute the constant dropping of hair to this fact. Some dogs are thus affected for years, and one is inclined to suspect that the cause lies in some loss of control of production. It is difficult to suggest a satisfactory line of treatment, but daily brushing minimises the inconvenience of having hair deposited wherever the dog lies.

Alopecia (Baldness).—Alopecia is found in conjunction with other skin diseases, such as mange and eczema, where an explanation for the loss of hair is obvious, but many of the causes are more obscure. Some are the result of neglect with the constantly dirty skin and invasion of the hair follicles with bacteria. These cases respond well to regular bathing and sponging with a suitable antiseptic, *e g.,* hydrarg. perchlor. 1:1,000. Other causes are to be found in conjunction with such conditions as obesity, chronic digestive disturbance, chronic metritis, chronic nephritis, during or after pregnancy, hormone unbalance, while defective circulation may be the cause in some breeds, such as the Manchester terrier, where there is frequent baldness of the ears, toes and tail.

Treatment.—Apart from dealing with the underlying cause, thorough cleansing of the areas and well rubbing with paraffin liq. or simple ointments and occasional dressings of bay rum and cantharides, etc. In some animals local treatment can be usefully supplemented by a course of thyroid extract over a limited period. Other treatments suggested are injections of spleen extract, and castration, which may be practised with advantage in those cases where there are enlarged prostate glands.

Urticaria (Nettle Rash).—Is exhibited in the form of a number of raised areas of congested skin, resulting in most cases from anaphylaxis, due to the consumption of unsuitable protein for the particular animal, such as fish. Similar symptoms are observed in sensitive skins during infestation with fleas, while others will exhibit a nettle rash after each application of a lotion such as calamine, the administration of some drugs, such as ipecacuanha and quinine. The symptoms are more alarming than serious and readily disappear on the removal of the cause, assisted in the cases caused by unsuitable food by the administration of one or more doses of saline.

Angio-neurotic Œdema.—Is an urticaria associated with œdema, chiefly of the face,

cheeks and eye-lids, but may also appear on other parts of the body. It is usually seen in puppies and is apparently associated with the eating of lamb for the first time.

Treatment consists of the administration of salines, stomach lavage and epinephrin 5 c.c.[2]

Dermatitis—Epidermatitis. Inflammation of the Skin. Eczema.

Dermatitis is perhaps the most common condition of the skin with which we have to deal. The causes are many and varied, and classification is difficult, but one may put them under the headings of Squamous, Vesicular, Moist, or Pustular, according to type. The causes can be external, internal, or both, and in order to arrive at a satisfactory diagnosis it is essential that one makes a thorough examination of each individual case presented, otherwise one is likely to find that at least a much longer period of time will be taken up in bringing about a recovery than would otherwise be necessary. Examination of the skin alone is not sufficient to permit of a correct diagnosis of the nature of the primary cause, and one must thoroughly overhaul the patient before one can decide on the type of treatment which is most likely to bring about the best results.

The external causes of dermatitis may be classified as Mechanical, Chemical, and Parasitic.

Mechanical causes are generally found in scratching, chafing of the neck with the collar, the animal producing tail lesions by dragging himself along the ground because of irritation in the anal region, usually owing to dysfunction of the anal glands. The presence of dirt on the skin may also be responsible.

Treatment consists in removal of the source of irritation and the application of emollients.

Chemical sources are usually those agents which are unwisely applied for the treatment of pityriasis such as kerosene, and for mange such as strong tar dressings. The use of strong alkaline solutions for bathing and the effects of sea-water should also be included under this heading.

Treatment. To counter the effects of kerosene and the tar preparations, dress well with paraffin liq. until the acute effects wear off. Then wash. Later, dressings of plumbi subacet., and in the case of the alkaline dermatitis sponge the dog with a weak solution of acetic acid or vinegar. The effects of sea-water may be countered by emollients.

Parasitic.—Under this heading are placed those cases which one sees following heavy infestation with lice and fleas, and which have been neglected. They respond to repeated washing.

Internal Causes.—May produce a general or local dermatitis. The chief causes are to be found in protein poisoning and chronic nephritis. Under the former heading arises the condition which may be described as vesicular dermatitis or vesicular eczema, and it is this condition which one would like to see described as eczema, *i.e.*, the condition which arises as a result of allergy.

Vesicular eczema is observed as a pruritic eruption of papules and vesicles which rupture; the discharge dries, forming scales, followed by healing. It may be general or local. It would appear that before a dog can develop the train of symptoms which is here described as vesicular eczema it is essential that he should have some predisposition to the condition, and that predisposition may be hereditary. Such animals would be liable under varying conditions to exhibit symptoms of mild anaphylaxis or allergy. All allergic dogs need not respond to the same proteins, nor would they necessarily show evidence of the condition at all times, but only under circumstances where some additional factor was at work. This would account for the fact that many dogs can be fed on the same diet for long periods without exhibiting any of those symptoms, and suddenly, without addition to or alteration of the diet, develop this form of skin trouble. It is recognised and has been shown by experiment[3] that certain food-stuffs, such as fish (particularly salmon) and pork, and of the vegetable group, pea, bean, lentil, rice, oats, maize and potato, are liable to cause these allergic symptoms, while the proteins of wheat may also do so; but, before one finds evidence of their unsuitability, these proteins must either be consumed in considerable quantity so that the bowel is flooded with them, or the natural barriers of the liver and gastro-intestinal mucous membrane must be weakened. A condition of allergy is more likely to develop in dogs suffering from certain other conditions, such as focal infections, intoxication (particularly in constipation and bowel infections), during teething and in irritations of the skin, such as changing of the coat, chafing, irritation of the feet and so forth.

Treatment. Correct the diet, cut out suspicious foods and plan a diet to suit the special case. It may be necessary to experiment with various kinds of food before arriving at a suitable diet, but usually milk and raw meat will be effective. Remove any discoverable contributory cause, attend to teeth and gums, overcome constipation, administer salines, vermifuges, intestinal antiseptics, as the case demands. Get rid of old coat by combing, brushing, stripping or clipping as required. Apply lotions such as lead or zinc and prevent injury of the parts from biting or scratching by the use of Elizabethan collar, hobbles, or a light overall.

Local.—The more common local lesions are interdigital, aural, scrotal and labial, where the appearance is altered somewhat by the addition of moisture—in the case of aural eczema by lack of ventilation, and in the others by almost

constant licking or flow or saliva over the lips. In these situations it is highly advisable to have the parts kept as dry as possible by the use of evaporating lotions and protecting the scrotum or foot from being licked. The feet should be encased in bootees which permit of ventilation.

Moist Eczema—Probably comes within the same category with similar causes as the vesicular variety, but there are definite differences. The lesion is of a different type in so far as it does not show the various stages of eruption. It is commonly regarded as being produced by fusion of a large number of vesicles similar to the other vesicles and it certainly is often seen in conjunction with vesicular eczema, but the complete picture as we know it appears as such with such rapidity that there must be some other factor at work, and it is in fact frequently seen in a small area without other evidence of skin lesion. It is sometimes suggested that the lesion is produced by interference on the part of the dog, but one does not feel quite satisfied on that point, and while the animal does try to like the part it is quite usual to find a case where there would appear to have been very little, if any, interference, and where even the hairs had not been disturbed. Again, it is rare for a dog to develop more than one crop of the lesions, while in the vesicular form there is a tendency for fresh spots to develop at more or less regular intervals. The areas affected vary in size, but are seldom smaller than a florin, and the discharge is capable of setting up similar sores on the surrounding skin. This variety responds to treatment readily and in most cases has disappeared in the course of a few days.

Treatment.—At the onset the condition is painful and requires careful dressing. It is not advisable to use water unless one wishes under special circumstances thoroughly to cleanse the sores and remove hair and discharges, and in that event the addition of H_2O_2 to the warm water is a great help. For the dog's comfort all dressings and instruments should be at approximately body heat. It is usually preferable to postpone the cleansing of the part for at least 24 hours, and to commence the treatment by spraying with a local anæsthetic, followed by a spirituous antiseptic and astringent lotion applied by spraying, one suggested suitable lotion being hydrarg. perchlor. 1-1,000 to 1-500 in equal parts of spirit and water, or alternatively the part may be sprayed with tannic acid. After a few such dressings the part can be thoroughly cleansed and a less drastic lotion applied, *e.g.*, zinc. carb. 6, glycerine 4, spirit 4, aquæ 8. Scab formation soon takes place, when smearing the parts with a simple ointment will bring about their removal, leaving a healthy skin beneath and over which the hair soon grows. The administration of a daily dose of saline would appear to hasten recovery. Steps must be taken to prevent the dog from interfering with the parts, because constant wetting with the tongue retards healing and aggravates the inflammation. The use of ultra-violet rays is highly recommended by some, but is not essential to rapid healing.

Nephritic Dermatitis.—Is the condition seen in association with disease of the kidneys. It takes the form of squamous dermatitis, frequently with sebaceous deposits and some depilation. It is found chiefly along the back and loins. The degree of pruritus is not great except in the more advanced cases, where there is dryness of the coat and general irritability of the skin, at which stage larger areas of the skin are liable to be affected.

Treatment.—Apply appropriate treatment for nephritis and give frequent baths with the addition of sodii. bicarb., and dry with a rough towel.

Pustular Dermatitis.—Is an infection of the hair follicles and sebaceous glands with ultimate formation and discharge of pus. The *Staphylococcus pyogenes albus* is credited with being the causative agent[4] and it is found in several forms, the more common of which are acne and furunculosis. In the former, the areas most commonly affected are the lips and adjacent skin, while in the latter the lesions, which are larger in size, are commonly found on the nose, elbows and hocks. Another form consists of a number of abscesses in the skin which are commonly found in the region of the toes, on the metacarpus and metatarsus, on the eye-lids, shoulders and other parts of the body.

Treatment consists in the evacuation of the pus and swabbing or syringing with antiseptic solutions, such as hydrarg. perchlor. or acriflavine. The internal administration of tin, and in the case of furunculosis the injection of quinine, 40 grains to the ounce,[5] and autogenous vaccination are recommended. Acne responds fairly well to treatment, but furunculosis and the form in which the abscesses are present are more intractable, one group of abscesses being usually followed by another.

Impetigo.—In the dog is usually to be seen in the very young, and is commonly observed in puppies only a few days old. It occurs as circumscribed pock-like blisters containing a yellowish turbid fluid and is most readily noticeable on the less hairy parts, such as the abdomen, but may be found on any part of the body. It is not associated with any evident disturbance of health and causes no inconvenience to the animal.

Treatment is unnecessary; the blisters rupture, the discharge dries and a normal skin is left beneath. To prevent risk of infection of the parts, swabbing with boracic water is all that need be done.

While discussing this condition one might refer to the skin wounds with scab formation fre-

quently found on young puppies, and which are probably caused by simple infection of broken skin surfaces, such as the navel, the feet, at the site of removed dew claws, and on the end of the tail after docking. Such sores do not tend to become serious and dressing with a mild antiseptic is all that is necessary.

Vagotonia.—Under this heading Dr. Henri Roger[6] describes a form of squamous dermatitis with yellowish diffuse papillæ, the lesions of which are to be seen in the region of the nose and eyes, and sometimes on elbows, toes and around the ears. He ascribes the cause to thyroid deficiency with sympathetic disturbance. Other symptoms than the skin lesions are nervousness, trembling, hyper-salivation and lachrymation, tachycardia and dry nose. A condition of vagotony exists which he demonstrates by taking the oculo-cardiac pulse. This is done by first taking the normal cardiac pulse and repeating that with the addition of pressure on the eyes. The pulse is taken for 10 seconds and multiplied by 10. In vagotony the pulse is lowered on compression of the eyes.

Treatment consisted of the daily administration of thyroid extract, from 35 to 75 centigrammes per day, over a period of 2½ months, without which treatment, the condition is fatal.

Acanthus Nigricans.[7] Hyperplasia Papillaris Pigmentosa.—This is a condition occasionally met with in which the skin becomes thickened with change of colour. It commences as a bi-laterally symmetrical erythema, usually on the abdomen and inside of the thighs, with the tendency later to spread to the chest. At the outset the skin is hypersensitive and there is some pruritus. As the case advances the skin becomes darker in colour, passing through shades of grey to brown with depilation and the formation of ridges and furrows. Advanced cases are not likely to respond to treatment, but the condition may be checked in the early stages.

Treatment during the hypersensitive period consists in the application of astringent lotions containing some local anæsthetic, and later sponging with 2½ per cent. zinc chlor. solution. In the more advanced cases 10 per cent. ac. salicyl. ointment is indicated.

Scleroderma (Thickening of the Subcutaneous Tissue).—The skin has thickened and has lost its elasticity, and hair falls out to a greater or less degree; it usually occurs on the neck and shoulders. It is occasionally found in association with some other diseased condition of the dog, and has a tendency to disappear with the return of health.

Treatment consists of the rubbing in of iodine ointment.

Pachydermia. Elephantiasis. (Chronic Inflammatory Thickening of the Skin without Heat and Tenderness).—At first the hair becomes sparse and later a part is left without hair. The areas affected vary in situation and size, depending on the causative factor. It may follow œdema or be associated with large abscesses or acne, but frequently it is difficult to ascribe any cause to the appearance of the areas.

Treatment consists in the application of astringent lotions, such as lead, zinc-chlor., etc., in the early stages, followed by iodine ointment and protection of the parts from interference by the animal.

Gangrene (Death of the Skin).—May be caused by any condition which cuts off the blood supply, such as burning, freezing, and large wounds, but may also be due to arterial embolism. It is seen in two forms, *viz.*, dry or parchment-like, and moist, when it appears in various shades of blue and purple. There is sooner or later a sharp line of demarcation between the healthy and dead skin and a variable degree of intoxication may be observed.

Treatment of the dry form consists in soaking the part with antiseptic oil and bandaging until the part has sloughed, followed by antiseptic wound dressings of one's choice, and later by epithelial stimulants, such as Pellidol ointment. In the moist condition remove surgically all the affected parts as and when indicated, and follow up with the antiseptic dressings and epithelial stimulants as indicated in the dry form. When symptoms of intoxication present themselves, it is advisable to administer stimulants, such as camphor and ether, and saline injections.

Burns and Scalds.—When it is possible to deal with these cases soon after they have been caused, the best agent to employ is tannic acid applied thickly by means of a spray and bandaging the parts for a variable period up to three weeks according to the extent and degree of injury caused. In the later stages local and general treatment as for gangrene.

Mixed Skin Affections.—In examining affections of the dog's skin one is sometimes struck by the comparative frequency with which there are to be found more than one condition, sometimes two or three different skin lesions being present simultaneously, such as mange, one or other form of non-parasitic dermatitis and impetigo. It is well not to be misguided into a wrong diagnosis and attempting to deal with the case as one of uncomplicated cause. The result would prove to be very disappointing.

References

[1] McKenna and Longley. *North American Veterinarian.* January, 1933.

[2, 3] Schnelle. *North American Veterinarian.* January, 1933.

[4] Ch. Leblois, Document Dermatologie Animale (Chien et Chat). 1926.

[5] Stainton. *Vet. Record.* Vol. XIV. p. 393.

[6] Dr. Henri Roger. Alfort College. Vagotonia. Thesis, 1932.

[7] Heinrich Jakob. Innere Krankheiten des Hundes, 2nd Ed.

Discussion

The discussion was opened by Mr. J. W. H. Holmes, m.r.c.v.s., d.v.s.m., of the Royal Veterinary College, London, in the following terms:—

This is the first Congress of the N.V.M.A. I have had the opportunity of attending, and I am greatly honoured by the invitation to open this discussion. Mr. Cormack, by his courtesy during the period of preparation, and by the excellent paper he has produced, has rendered my task a very pleasant one. I wish especially to congratulate him on the manner in which he has adhered to the subject, wisely excluding a consideration of cutaneous tumours, and affections of special parts, particularly the ear, which are large enough subjects in themselves to form the basis for other meetings.

I wish, in the first place, to enlarge a little on the essayist's opening remarks concerning the importance of the subject. In my experience, from the records and analyses of our cases for the last four years, 20 per cent. of all dogs brought up for examination are affected with skin disease. The majority of these, however, are parasitic in origin, only approximately 39 per cent. being classed as non-parasitic. When considered from the point of view of frequency it is thus obvious that it is the parasitic conditions which are of prime importance. These cases, however, offer little difficulty in prognosis and treatment, once a definite diagnosis has been established. Non-parasitic skin conditions, on the other hand, tend to be less definite in character, and as Mr. Cormack points out, not uncommonly two or more conditions occur in the same patient simultaneously, thereby adding to the difficulty of diagnosis.

It is not surprising that there is still much speculation on the causation of the various conditions. The prognosis is less definite, and treatment cannot be undertaken with the same degree of confidence as when dealing with parasitic diseases.

We now come to a consideration of particular diseases mentioned in the paper, commencing with seborrhœa. I have observed this condition especially in long-haired breeds such an spaniels, setters and retrievers. A point of interest has been the simultaneous presence of a marked waxy otorrhœa, usually associated with pus, in almost all cases. This is not surprising, as the ceruminous glands of the ear may be regarded as a special type of sebaceous gland. General debility has not frequently been present, but has occasionally been noted in widespread cases associated with acne and furunculosis.

I am not convinced that the cause of seborrhœa is bacterial or in the form of an intoxication, as suggested by Mr. Cormack. Physiological works do not go into any great detail regarding the method of function of the sebaceous glands. It would be interesting to know whether or not there is any nervous or hormonic controlling mechanism which may, under certain circumstances, be upset, and so give rise to clinical symptoms of the condition. The importance of the disease lies in the difficulty of forming an accurate prognosis, and the results of treatment are, I consider, to be viewed as uncertain.

Alopecia forms a very important group of cases, and calls for great care and skill in differential diagnosis. Two parasitic conditions, namely, ringworm, and the squamous form of follicular mange, are of particular importance in this connection.

In ringworm, a history of contagion and possibly even spread to man is usually available. The definite circular character of the lesion, and the presence of broken hair stumps, are points of value, while further assistance may be obtained by applying the chloroform test or by use of Wood's glass, and the diagnosis finally confirmed microscopically.

Follicular mange usually, though not invariably, attacks patients under two years old. There is generally an irregular distribution of lesions showing loss of complete hair fibres, scaliness, and the development of a slatey-blue colouration of the skin. Fortunately the parasite is easily demonstrated in most cases.

Having decided that the case is in fact non-parasitic, the next step is to endeavour to find a cause, and to apply appropriate treatment. Cases associated with œstrum, or pregnancy, are usually accompanied by irritation, the patient biting at the affected parts and appearing sensitive to the touch. The lesions are, in most patients, confined to both flanks. Such cases may be looked upon as satisfactory, recovery resulting in from three to four weeks, the only treatment necessary being laxatives, and, if the irritation is very pronounced, the application to the affected parts of a sedative lotion, such as calamine lotion.

Alopecia associated with thyroid deficiency forms another fairly definite group. It almost invariably affects bitches, and generally brown-coated animals. The patients are, as a rule, young adults under four years old. The symptoms observed are some degree of general depression and lassitude, accompanied in some instances by cardiac irregularity. The coat appears dull or dead and has a harsh feel. The lesions of alopecia are bi-lateral and symmetrically arranged, showing loss of complete hair fibres, the skin in these areas being dry in character. The line of treatment adopted is the internal administration of liquid thyroid extract, giving from 5 to 10 mms. twice daily, combined with external grooming with a simple lotion, such as one containing glycerine 1 oz. and a solution of chinosol (1 in 500), *ad* 8 oz. A definite response may be expected in about a month, although it may be necessary to continue treat-

ment for a longer period. It is advisable gradually to diminish the dose of thyroid extract or to give it less frequently, once a good coat has re-grown and the general symptoms have abated. Recurrences are to be anticipated, in which case treatment must be repeated.

The incidence of alopecia of a widespread nature, other than that associated with thyroid deficiency, increases in direct proportion to the age. Animals of different breeds and colour appear to show no marked differences in predisposition. Males appear to be affected more frequently than females, but this observation may be more apparent than real, because it must be remembered that dogs are more numerous than bitches. Testicular atrophy and obesity, referred to by Mr. Cormack, are seen in some of these cases, the treatment of which is uncertain in its results.

Urticaria and the symptoms, described by the essayist under the heading of angio-neurotic œdema, are usually observed in puppies, after the ingestion of fish. I have not observed urticaria following the internal administration of drugs, nor have I been able to attribute other forms of skin eruption to this cause, although I have anticipated and watched for such in patients kept on bromides for prolonged periods for nervous conditions.

We now come to the second portion of the paper, dealing with the various forms of dermatitis, and it is around this section, I think, that most of to-day's discussion will centre. It is certainly that branch of the subject on which most differences of opinion are held. I would draw your attention to the essayist's opening remarks, which state that classification of this section is difficult. It is therefore essential accurately to describe the conditions implied so that confusion in the discussion may be prevented.

Acute moist eczema is a painful inflammatory condition of the skin. The lesion is characterised by erythema with papules and vesicles, and the production of a blood and pus scab covering an excoriation, and glueing together the overlying hairs. This condition, in my experience, forms approximately half of the non-parasitic skin diseases encountered in dogs. Hutyra and Marek state that the causal factor is usually external, and my observations agree with this statement. Professor Wooldridge, on the other hand, as shown in his Encyclopædia, does not hold this view. He considers that true eczema is always internal in origin. He does, however, agree that a moist dermatitis is often due to external factors and the condition produced may, in his opinion, readily be confused with true eczema.

Analysis of a series of 55 cases shows that the disease is more frequent in Airedales, wire-haired terriers, and the breeds with longer coats, and it is only occasionally seen in very short-coated varieties. The seasonal incidence varies only slightly, showing a small increase in the number of cases during the summer months, probably associated with casting of coat, which occurs at this season, or secondary to fleas and lice, which are particularly active at this time of the year. Examination of charts used to record the distribution of the lesions shows that the condition is usually localised in character—strong evidence in favour of an external cause. The site gives a clue as to the possible origin, below an ear, when secondary to otorrhœa, or on the croup when associated with anal gland irritation. In general, it may be said that lesions are most commonly found on the thickly-haired parts of the body, particularly the dorsal surface, scrotal eczema being a notable exception. Further evidence to support the view of external causation is the fact that identical symptoms are observed, when a very definite external cause is present, as in the case of eczematous lesions, noted in association with sarcoptic mange.

The question of recurrence is important. It was noted in eleven of the 55 cases, but in six of these an obvious reason existed, leaving five cases (approximately 10 per cent.) of unexplained recurrences. These were possibly associated with an internal factor. The frequent development at short intervals of scattered eczematous patches in a patient should lead to a suspicion of an underlying mange as the probable cause, a more definite opinion of which can be formed after generalised clipping.

The removal of the cause, when discovered, and the local treatment of the lesion on the lines recommended by Mr. Cormack, using first a sedative astringent lotion, and after a few days an emollient, gives excellent results, the average period of treatment being about three weeks. I agree that the use of ultra-violet rays is not essential; nor, in fact, does it greatly hasten the healing process. Change of diet is not as a rule necessary, although, of course, any glaring errors in feeding should be corrected. Internal medicine, apart from the occasional use of sedatives to relieve pain in the early stages, is seldom called for.

Allergy in relation to canine skin disease, excluding urticaria and angio-neurotic œdema, is an interesting theory, but, while it may be a contributing factor in a few instances, I do not consider it has an important association in the majority of cases. I am unconvinced by the reports of American workers, which are neither sufficiently extensive nor conclusive enough to permit of a definite opinion being formed.

Mr. Cormack has referred to nephritic dermatitis. What are the details relative to this condition in dogs? Definite cases of chronic nephritis confirmed by examination of urine, and all too frequently further proved by *post-mortem* examination, are commonly seen, but in such patients

I have not observed skin lesions. Further, an examination of urine has been carried out in practically all cases of skin disease in which there has been a doubt as to the origin. The result of this is that during a period of four years, out of 300 skin cases, 117 of which were considered non-parasitic, an albuminuria was discovered in only three patients, urinary casts being found on microscopic examination of deposit in two of these. The patients were two wire-haired fox terriers, and a Kerry blue. All were adult males. The Kerry was eight years old, and one terrier nine-and-a-half years, while the age of the third dog was not definitely ascertained. A chronic history of several months' skin affection was common to all three cases. The patients were bright and in good bodily condition; one terrier, in fact, showing a tendency towards obesity. The skin symptoms noted closely resembled those described in the paper, but were widespread all over the body, showing an accumulation of epithelial, bran-like, chalky scales. The horny layer of the skin was heaped up in places, forming small papillæ, on a skin which easily bled on scratching. A strong, disagreeable odour was observed in one of the terriers, and widespread alopecia was a feature noted in the Kerry.

A definite conclusion as to cause, and effect, is not possible in these cases, because trace was lost of two, and the third, one of the terriers, responded to treatment after a period of two months. The measures adopted in this instance were simply the internal administration, twice daily, of ½-oz. doses of mist. alba., given with the idea of relieving the kidneys of some of their work, and externally grooming with a chinosol lotion to remove the scales.

Acne and furunculosis offer great scope for discussion. They are of importance in view of their frequency. In the series of 117 non-parasitic skin cases already referred to, there were 17 cases (or approximately 14 per cent.) of these conditions. They are also important because of the difficulty of treatment. The diagnosis is usually fairly easy, but the possibility of follicular mange, particularly in young animals under two years old, should be excluded by microscopic examination.

Drastic surgical measures are called for in the treatment of furunculosis. It is not sufficient simply to incise the skin over the burrows, but the roof should be removed and the raw area so produced cauterised with silver nitrate. The only local after-care then necessary is the simple cleansing of the wounds, and healing may be expected in from two to three weeks.

Cases in which the condition is generalised are all worth a trial, although they call for great patience on the part of the client, the animal and the surgeon, and a period of six months' treatment may be necessary. Local affected areas about two to three inches square may be attacked at weekly intervals under local anæsthetics. The feet, which usually in such patients resemble sponges, are best operated on either two at a time or all at once, using morphia and local anæsthetic, or after the administration of a general anæsthetic. The important point to be borne in mind is to be drastic enough, opening up each and every furuncle to its extreme limit. Extra food, cod-liver oil, yeast, and general tonics are advised, and a course of autogenous vaccinations may be given. Such treatment, however, should only be regarded as of secondary importance to the surgical measures.

There are numerous important points in the paper on which I have not attempted to touch, but I trust that I have sufficiently enlarged upon it to provoke a good discussion.

Professor G. F. Boddie (Edinburgh), continuing the discussion, said that he thought the paper was hardly getting the attendance that morning that it deserved. He did not imagine that many of those present could sympathise with Mr. Cormack's difficulties in writing the paper to the same extent as he could do, because it was only a little over four years since he had had to write lecture notes on Non-Parasitic Skin Diseases of the Dog and Other Animals, and it was a singularly difficult thing to describe these in reasonably clear language. He thought they must congratulate Mr. Cormack on the results of his efforts. There were, however, quite a number of points where he found himself at variance with Mr. Cormack, and he thought that was only to be expected when one realised the diversity of lesion that appeared in even one particular skin disease.

At the very beginning of the paper Mr. Cormack referred to the possible effect of excessive alkaline salts, and went on to say that dogs' skins were hyper-sensitive, while on the same page he recommended in treatment the use of a lotion containing washing soda. To the speaker's mind, these statements were contradictory. So far as the skin of many dogs was concerned, it was impossible to get a washing soda solution sufficiently weak. Later in the paper, however, Mr. Cormack referred to baking soda. The speaker wondered if confusion had arisen between soda carb. and soda bicarb.

Mr. Cormack then referred to œdema of the skin in connection with disease of the heart. That surely could be of little clinical importance, because it must be the very end of a heart case before one obtained œdema of the skin itself following subcutaneous œdema.

The reference by the author of the paper to quinine as the cause of urticaria in dogs was of interest, particularly in bulldogs, as they had seen more than one case of that in Edinburgh.

On page 4 of the paper, at the top of the second column, Mr. Cormack referred to lead lotions. The speaker wondered if Mr. Cormack was satisfied as to the safety of extensive use of lead lotion on dogs. To his mind, it was a very risky proceeding, even if one put on an Elizabethan collar, as there was a substantial risk of lead being absorbed, particularly if the skin was broken.

With regard to nephritic dermatitis, he did not like that term. He was in agreement with the author that the terminology of diseases required revision. He thought that the lesion found in

connection with chronic nephritic dermatitis was very common, and that the treatment for nephritic dermatitis was none other than diet. The author suggested, in an exceptional way, the use of a bicarbonate solution. Without being unkind, in regard to impetigo, he did think Mr. Cormack had gone completely "off the rails." He did not think that what Mr. Cormack described as impetigo would be recognised by any dermatologist as impetigo at all. In the first place, impetigo was not necessarily a disease of young dogs; in the second place, it was essentially a chronic disease, whereas Mr. Cormack described it as a thing that cleared up quickly; and, thirdly, the speaker did not think Mr. Cormack had described the lesion of impetigo. The impetigo lesion was always flat, round, and sometimes oval, but always flat. It ruptured and left one with a flat scale, which scale was shed off very quickly, and they were then left with a ring-like lesion. It was very often mistaken for ringworm. The bugbear of the disease was that these lesions would clear up and then a succession of crops followed. They had applied quite a number of ointments and had given arsenic internally, and though they got best results with 1 per cent. white precipitate ointment, in Edinburgh, at any rate, they regarded impetigo as being an unpleasant chronic disease which did not satisfactorily respond to treatment.

To stop picking holes in the paper for a moment, although on the whole he was in agreement with what Mr. Cormack had said, he was greatly struck by the success they had attained in some of the more chronic streptococcal types of disease by going back to the more old-fashioned medicines. They had stopped using "Odylen" and "Mitigal" and all these expensive lines of treatment and had gone back to precipitated sulphur and liquor picis detergens. It made the dog in a horrible mess and meant that it had to stay in kennels, but he thought that on the whole they had got very much better results with these treatments. He did not know if he was in order, but he would like to know how mistura alba could possibly relieve the kidneys, as Mr. Cormack suggested, in his opening of the paper.

The Reply

Mr. Cormack, in replying to the discussion, said he should like, in the first place, to say how indebted he was to Mr. Holmes, the opener of the discussion and to Professor Boddie for taking part in the discussion, and also for the congratulations which they had conveyed, but he must say that he was definitely disappointed that there had not been a really full discussion. (Hear hear, and applause.) It was not the sort of thing he would take to heart, simply because he had fewer questions, but there must be very few practitioners to-day who did not frequently come in contact with the diseases described in his paper, and he was quite confident that these conditions must present the same difficulties to these practitioners as they had presented to him.

He would try, as far as possible, briefly to deal with one or two points raised by Mr. Holmes. He considered that they were extremely fortunate to have so able and enthusiastic an opener of the discussion. Mr. Holmes was one of their young, enthusiastic and very thorough workers who had for a considerable time been devoting much of his time to the study of skin diseases. Mr. Holmes was in a position to make records of cases that came under his notice. Mr. Holmes put down the percentage of skin diseases in dogs that appeared at the London hospital clinic at 20 per cent. Some had put the percentage much higher, and the speaker, without having records to go by, was inclined to estimate the number of cases of skin disease that one met with in small animal practice as much more than 20 per cent. Of course, they also knew that Mr. Holmes was a perfect fiend for finding parasites in the skin—(laughter)—but the speaker was convinced from ordinary observation that the percentage of non-parasitic conditions in general practice would work out at much more than Mr. Holmes' figure. Mr. Holmes had dealt with the question of seborrhœa and had stated that in many cases he could find no evidence of debility. The speaker was inclined to believe that even in cases of animals that were not thin—poor—one could still have a debilitated condition. One could have an animal that was below par, in an unhealthy condition, although it continued to carry a fair amount of weight. Mr. Holmes had also asked a question as to what was the mechanism that he could not give an explanation as to how these glands were controlled and he did not know of the sebaceous glands. The speaker was afraid anyone who could, but the sebaceous glands, to his mind, responded very readily to any little upset in the condition of health. He knew from his own experience that if he started off in the morning with a fair amount of oiliness in his hair and he had a very tiring, hard day, by the end of the day his hair would probably be perfectly dry, which, to his mind, showed that the sebaceous glands were capable of responding very rapidly to the general condition of the animal. Beyond that, however, he was afraid he could offer no suggestion as to the manner of control of the working of the sebaceous glands.

Mr. Martin interposed, to ask Mr. Cormack if he could give some information in regard to the interdigital glands.

Continuing his reply to the discussion, Mr. Cormack proceeded to deal with the question of alopecia. Alopecia, coming within the category of his paper, naturally excluded ringworm and mange, and he thought that in these cases one naturally suspected some parasitic condition and there was no need to look further for any more obscure cause. Thyroid deficiencies were undoubtedly responsible for many cases of baldness in dogs. One would like to have further information on the interaction of the hormones produced by the thyroid, the testes and the ovaries. He thought it was quite possible that one day they would be able to adjust their treatment according to the individual case, when they were positive as to the exact interaction of the various endocrine glands. Mr. Holmes had not come across any cases of urticaria due to the consumption of drugs. The speaker, however, was very glad that Professor Boddie had mentioned that in the "Dick" College they had definite evidence of the production of urticarial lesions following upon the administration of drugs. He had mentioned in his paper the effects of calamine. Calamine lotions were used very commonly on the skin of dogs, and he had come across one or two cases where the animal's skin seemed to be hypersensitive to the application of carbonate of zinc, and after each application one found the skin showing urticarial patches, and the urticaria ceased when no further application of carbonate of zinc was made.

He had been hoping for a considerable amount of opposition and had been very pleased to hear Mr. Holmes express the opinion that moist eczema was nearly always due exclusively to external causes. He was afraid he could

not subscribe to that idea. It was a fairly common thing, in his experience, to get moist eczema in long-coated dogs, and if one examined the skin of long-coated dogs, even if the hair was very dirty, further down they would probably find, long before they came to the root of the hair, that the hair and the skin were beautifully clean. It might have been that the dirt to which Mr. Holmes referred was of a microscopical nature, but the speaker understood that it was the ordinary dirt that one found on the skin after a dog's normal perambulations. He was not at all satisfied as to the cause of moist eczema. Definitely it was not a very troublesome condition. Mr. Holmes had said that he got cases well in a matter of two or three weeks. The experience of the speaker was that in the average case it was not necessary for treatment to be prolonged much more than a week. He was not going to throw out any suggestion as to what the exact cause might be. He observed that Mr. Holmes and Professor Boddie had joined in discussion of what the speaker called vesicular eczema. He had been hoping that the greater part of the discussion would centre round vesicular eczema. To his mind, vesicular eczema was a condition distinct from the common moist eczema. Its prevalence was very considerable and his opinion was that in the majority of cases the condition arose as a result of allergy. That opinion could be backed by testing the skin. It was possible to get supplied, quite readily, allergens of proteins prepared from various foodstuffs and to test the skin, and when one did that one found that in quite a number of cases of what the speaker would describe as vesicular eczema, the skin would give a reaction to one or other of the protein extracts. The better of the two commonly used methods for testing the skin he considered to be the intradermal puncture. With the intradermal puncture one frequently got a reaction where one failed to get a reaction by the scarification method. Mr. Holmes considered that the presence of fleas and lice on the skin of the dog in summer might have some influence in the production of moist eczema. The speaker, however, found moist eczema quite as common on the skin of dogs that were not at all affected by either fleas or lice; it was, in fact, not at all uncommon to get moist eczema soon after an animal had been bathed, which ruled out the question of parasites and ordinary dirt on the skin. One of the arguments in favour of moist eczema being due to the effects of dirt was the question of site. He knew that Hutyra and Marek tried to argue that moist eczema was quite easily explained as being due to external causes because one found it in the region of the tail and other parts liable to be soiled. In their book, on the same point, one found illustrations of moist eczema round the tail and on the back, but unless the animal commonly lay on his back in the excreta, the speaker could not imagine how it got the eczema on its back. Mr. Holmes considered that the question of allergy was not important, but the speaker, as he had already stated, considered that there was a large field for further investigation as to the part which proteins in the food played in producing the condition in hypersensitive animals.

Mr. Cormack wished to interpolate at this stage that the classifications of vesicular eczema and other diseases were really his own terms, and he had been expecting to be pulled up for having departed in any way from the orthodox methods of description. The orthodox methods of description, to his mind, might be useful in some ways, but from the point of view of the clinician they were quite useless. He thought the classification really required reorganising. He had made an attempt to boil the matter down so that one would be able, on examination of a case, to classify it more readily. For that reason he had called squamous dermatitis, which they found, to begin with, along the back of the dog, nephritic dermatitis and there was no reason why the description should not be improved. It was simply a description which he used in order to tack the disease down into a definite category.

Mr. Holmes had given a very interesting talk on furunculosis, and the speaker had been hoping that Mr. Holmes would be able to tell the members what really lay behind the onset of conditions such as acne and furunculosis. It would appear to be a very simple explanation that dirt containing germs, chiefly believed to belong to the staphylococcic group, infected the follicles and so set up a suppurating condition, but behind that there might be some deficiency. They were probably all aware that they were still, so far as mineral deficiencies were concerned, very much in the dark. He believed that within the next few years they would probably find that many other minerals were essential to correct health and perfect balance, which they did not understand at the moment. If he were to attempt to conjecture at all, he would suggest that conditions like these had behind them some deficiency. It might be a mineral deficiency.

He was much indebted to Professor Boddie for his remarks and also for expressing his appreciation of the difficulty of writing a paper of the kind in question. It was a very different matter for one in Professor Boddie's position, where he had everything at his hand and plenty of time to do such tasks, but the speaker thought if Professor Boddie were running a busy practice, for a great part of the time single-handed, and had to write a paper of the kind—devoting the space of perhaps two or three hours on a Sunday evening to it, and sometimes not that—he would have found the difficulties very much greater. Professor Boddie had taken exception to the use of washing soda. The speaker agreed with him that there had been a misprint in the paper, but the misprint was not what Professor Boddie expected it to be. The misprint was that soda bicarb. had been printed. Nevertheless, soda bicarb. was a very useful alkaline lotion to apply when indicated. One should only use a very weak solution of soda carb. at any time, and he should not recommend the use of it on any skin, but only when there was a very dirty, greasy or scaly condition. One could then use quite safely a 4 or 5 per cent. solution of washing soda. Professor Boddie had also referred to œdema of the skin. When the speaker had started to make his notes, he had gone over the various conditions with which one might meet, and when he included such conditions he did not really put them down particularly for one of Professor Boddie's standing or experience, but for the benefit of the novice, to assist him in at once recognising the disease. Lead lotions he had used very frequently and had never found any difficulty in regard to absorption or any trouble in any other way. He had expected that he would be pulled over the coals in regard to his frequent recommendation of the use of hydrarg. perchlor. That was the chemical to which he thought many people might take exception, although he had been using it over a period of probably 25 years. To begin with, he had used it with great trepidation, but latterly with the greatest confidence, and he looked upon

it as one of the most satisfactory skin antiseptics that one could use. Progressive nephritic dermatitis was, of course, unsatisfactory to deal with. If one found it, they could expect that sooner or later they were going to lose the patient. Nevertheless, one must apply treatment until the case was too bad. The treatment was undoubtedly unsatisfactory.

In regard to impetigo, Professor Boddie and he did not quite agree as to what impetigo was. The impetigo which Professor Boddie described he was afraid he should not recognise as impetigo, and probably the condition which he recognised as impetigo Professor Boddie would not accept as such. That was only one instance of the very unsatisfactory state in which the classification of non-parasitic conditions was at the present time. There was room not only for improved classification but also for investigation. Mr. Martin had enquired about the treatment of the interdigital glands. That, of course, was a condition by itself and was probably a bacterial infection that might arise in the sebaceous glands. One required to incise the swelling and set up fibrosis by the use of a caustic, such as silver nitrate.

The discussion was concluded with the according of a hearty vote of thanks to Mr. Cormack for his paper.

General Article

THE SELECTION OF THE COMMERCIAL HORSE

XI.—THE BREEDING AND USE OF WORKING PONIES

ROY B. CHARLTON
The Linnels, Hexham-on-Tyne

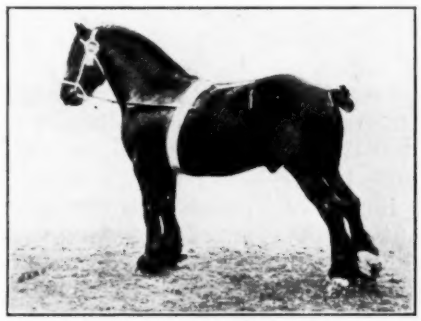
Britain has always possessed wonderful ponies, little animals that are world-famous for their delightful temperament, hardiness of constitution, freedom from hereditary unsoundness, and ability to do all sorts of useful work, and to subsist upon somewhat scanty food.

From a common wild stock, time and environment (and the interferences of mankind) have divided our ponies into distinct breeds, known to-day as the Mountain and Moorland ponies of Britain. Their names are as follows:—

Shetland; Highland (in two sections, the Garron, a 14·2 pony of the Highland Mainland of Scotland, and the Island breed, about a hand less in height, of Skye, Mull, Rum and other Western Islands).

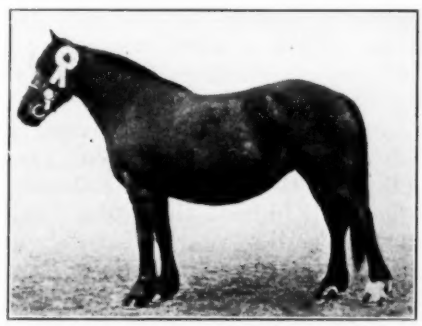
The Galloway (South West of Scotland—now almost extinct).

The Fell (Westmorland and Cumberland). The Dales (native to Allendale, Weardale, Teesdale, Swaledale and all that wild country to the east of the Pennine Range).



LINNEL COMET

Dales Pony Stallion. Black. 14·1. Winner of Champion Cup, London Show, 1923. First, Royal at Darlington, etc.



LINNEL FLIRT

Fell Pony Brood Mare. Black. 13·2. Winner of "Cecil" Cup, London Show, 1924. First, Royal, 1923, etc., etc., and Dam of Several Famous Fell Ponies, including Linnel Fluff, now Property of H.M. The King.

The Welsh (found roaming the hills of Wales from north to south).

The Exmoor; the Dartmoor; the New Forest and the Connemara of the West of Ireland.

Besides the above-named breeds, there are the Hackney Pony and the Polo Pony; both of these breeds are what we might term "new." They have been developed during the past 60 years—to-day they are established as true pony breeds.

I have carefully watched the wonderful development of the Polo Pony, an animal that was bred absolutely true to type up to a very few years ago, when the maximum height limit was removed for the game of polo. The craving for greater size, greater speed, and more and more thoroughbred blood, by players of polo, is making the breeding of Polo Ponies very difficult, to say the least of it. It is remarkable how very soon a change in type is noticeable. The "pony" characteristics which we always understood to be so valuable are quickly disappearing, and one wonders if in years to come the game of polo will be so delightful to the player.

The pony mind is quite different from the

mind of the horse. Only those who have spent years in the training of both classes of animal can fully appreciate how very far apart they are in temperament. The older horsemen of the country, men who have become heavy and less nimble, yet still wish to ride, almost without exception take to the heavy-weight pony: not because he is so much nearer to the ground for easy mounting—as some of these men would lead one to believe—but because these experienced old horsemen know that the true pony has a better brain—will do his job altogether more sensibly than the blood hunter would do. To realise this fully one must properly try ponies of Fell, Dales or Highland breed, as hacks upon an Estate—opening gates, and getting across rough places.

Each of the Native breeds of British pony has a home Society looking to the welfare of the ponies. The object of each Society is to keep proper registers, showing pedigrees and full particulars of every registered pony of its breed—to supervise careful breeding—to provide purely bred sires, and where Government grants are given, to hold Stallion Shows in the Spring of each year, usually about the end of April, and to recommend to the War Office Light Horse Breeding Department the most suitable sires for their premiums.

The Native Pony breed Societies have representatives on the Council of the National Pony Society, and the Stud Book of that "Mother" Society is the official register for the several Native breeds as well as for the Polo ponies of the country. The National Pony Society is fortunate in having Mr. F. H. Badge as its Secretary at 12, Hanover Square, London, W.1, who is also Secretary to the Hunters Improvement Society.

For a great number of years the National Pony Society has held its Annual Show of Ponies at the Agricultural Hall, Islington, on the Friday and Saturday of the Hunter Show week in early March.

I am strongly of the opinion that as working ponies, the Native breeds stand alone, and the nearer the individual pony is to its standard type, the more useful it is for real hard work.

The most important work done in this country by ponies, employing very great numbers, is colliery work.

I have been breeding and breaking quite large numbers of ponies in Northumberland for upwards of 40 years, and think I can claim that I *know* the mind of a pony, and I can also claim that I know something of the conditions under which the pit ponies of Northumberland and Durham have to do their daily work.

A great amount of very unnecessary fuss has been made in recent years about these poor dear little animals having to live under such dreadfully artificial conditions down in the bowels of the earth. No man living loves ponies more than I do, and I do not hesitate to say that from the pony point of view (a very limited view, really), it must be grand to be born a "male," which makes it possible to enter the most wonderful career imaginable at four years of age. Think of the regularity of the very best of food (quite the most important subject to the mind of a pony), food given out through highly experienced horsekeepers by big colliery companies, well knowing that to get the best out of their valuable ponies they must feed them absolutely regularly and upon the very best that can be obtained. Think of the good stabling, quite safe from the elements; people say things about the unfortunate little ponies having to live in an artificial light, with nasty air pumped to the stables. One has only to see the ponies coming back to the stables down below—see them plunging through their bath—shaking themselves and trotting on to their proper places, where brushes are waiting to dry and polish their coats. It is the regularity of the life that keeps them so fit and makes it possible for them to go on year in and year out to a great old age. He is a lucky pony that gets a pit job, and fortunately for him and for the breeders, his day is *not done*.

Our collieries have gone through a frightfully bad time—owners have tried all sorts of experiments to reduce costs. Mechanical haulage has been installed, but I understand that, as with those employing like haulage in big cities, when motor transit superseded the horse for a short time, colliery owners now fully realise that the pit pony does a great amount of the work *better* and at a *lower cost* than machinery can do. The little horse is regaining his footing in the pits in the same way as the big horse has decidedly done in the cities.

I have recently been purchasing both Fell and Dales ponies from 13·2 to 14·2 hands high. To find the ponies, I went to Westmorland and Cumberland for the smaller and more riding-like ponies, and to the Dales of Durham and North West Yorkshire for the 14 to 14·2 general purpose Dales Cobs. It was hay-time, and wherever I went I found ponies, not horses, doing the cutting, tedding and raking. I frequently got to a small farm to find the reaper being drawn by an aged 13·3 brood mare (the foal awaiting the return of its mother, in a loose box) alongside of her four-years-old daughter. At Threlkeld in Cumberland the pair in the hay reaper was a 13·3 Fell pony stallion and his aged mother—both perfectly happy and doing their job properly. I was buying four- to six-year-old broken ponies for the forests and grouse moors of Scotland—the bigger ponies for pannier work and game carts, and the Fell ponies to carry the shooters. I might say that the Westmorland and Cumberland Fell Pony breeder, generally speaking, is *not* a riding man—his ponies are simply ideal for the moors—as nimble as cats, great walkers, and the nicest disposi-

tioned little animals imaginable, but they know nothing about saddle work when purchased from the breeder. It is a fact that very few of the Fell pony breeders possess a saddle. I always carry a saddle and bridle with me upon these expeditions. The ponies have been "backed" as the breeder puts it, which means that the boy of the household has been lifted on to the pony's back a few times while the crude breaking is in progress, then the pony is put straight into harness. His temperament is so good that he seldom goes wrong, and in the hands of a horseman, a very few days teach him to be quite handy in saddle.

The Pony Club Movement in this country is making a wonderful impression from the pony breeders' point of view—when one thinks of only four or five years ago, the Pony Club had not been heard of. To-day it has 8,500 members, all children under the age of 17 years, and all wanting to possess ponies. Like members of Calf Clubs and the Young Farmer Movement, the youngsters are so keen that they are making the older people take a greater interest also. Riding generally has increased by leaps and bounds—Riding Schools and Riding Clubs are to be found everywhere, and the standard of horsemanship has possibly never been so high.

All this is setting the value of ponies up tremendously; prices are double what they were only three years ago, and good ponies are very difficult to buy.

The point that I wish to emphasise most is that our Native breeds of British pony possess characteristics which are of very great value—quite different from those of the horse. Every cross to the horse goes to weaken those valuable features, and I feel that I cannot plead too strongly for the preservation of the true Native pony.

I see no harm in crossing the true Dartmoor pony with the truly bred Exmoor pony or any other pony of the Mountain or Moorland breeds, but I do protest against the encouragement which is invariably given at our large Shows by Judges (who ought to know something about pony breeding before they venture to judge ponies) to what they would term "blood ponies." This class of pony is an absolutely "chance bred" animal—it could never go to stud with any certainty of what its progeny would be; yet nine times out of ten our leading judges give it the red ticket. If they would only stop to think, they would be bound to realise that while these misfits are winning all the prizes no encouragement whatever is being given to the animal which can claim true pony blood throughout its pedigree. Something must be done by the big shows to encourage and preserve the native breeds—to preserve that wonderful temperament which has gone so far to make the British horse the best in the wide World.

Clinical Communications

A CASE OF LEUKÆMIA IN A BOVINE

HAROLD BURROW, M.R.C.V.S., D.V.S.M.
BIRKENHEAD

The subject was a three-year-old Hereford cross bullock imported from Canada and slaughtered at Birkenhead on August 14th, 1934.

The carcase was well nourished and in good beef-condition, giving a dressed carcase weight of 691 lb. The appearance was normal in every part of the carcase and organs except the following: the spleen was greatly enlarged and weighed 14 lb., as compared with a normal weight of 2 to 3 lb.; the cut surface of the spleen was paler than normal, being of a rose-pink colour; the consistence of the spleen substance was slightly softer than normal but was not in any degree "fluid." The liver appeared paler than normal and was slightly enlarged. The kidneys showed numerous pale foci about the size of a large pinhead. Every lymph gland in the carcase was enlarged to the extent of four to six times the normal size. The lymph glands examined included the atlantal, parotid, submaxillary, retro-pharyngeal, prescapular, superficial and deep prepectorals, presternal, suprasternals, xiphoid, dorsals, renals, lumbars, internal and external iliacs, sacral, ischiatic, deep inguinal, precrural and popliteal, every one of which was grossly enlarged and soft in consistence; the cut surface of each of these glands was abnormally moist and "milky."

The bone-marrow was not altered either in consistence or colour.

Sections of typical lymph glands and smears from the blood (together with control sections and smears from a normal beast) were kindly examined by Dr. J. Morrison Ritchie, Bacteriologist, Birkenhead, who reports: "The appearances are those of a leukæmia of a somewhat unusual type, presenting some of the appearances of both splenomedullary and lymphatic leukæmias."

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PREPUBIC RUPTURE IN A MARE

E. G. CONISBEE, M.R.C.V.S.
KIMBOLTON, HUNTINGDON

The subject was a hunter-bred mare about 15·1 hands, aged about 15 years, and pregnant. She had reared a foal three years previously; otherwise, she had not been bred from, at all events since she was four years of age. She was at grass with two mares that had foaled and a couple of hunters, all of them apparently of good temper towards one another.

Attendance was requested on the night of June 25th, in consequence of sudden and extreme increase of size of the abdomen, which

had previously been noted as exceptionally big. She had been seen at 5.30 by her owner and discovered in this condition at 10 o'clock. When seen, the mare was recumbent; her temperature was elevated 2 to 3°, the conjunctival membranes were rather dirty in colour, the respirations were disturbed and while the mare was on the ground produced a somewhat asthmatical sound. When she was assisted to rise, the respirations improved. The increase in size affected the whole abdominal floor, but not equally so on either side. On the near side was a ridge of œdema as wide as a hand's span, passing forwards to the chest and limited inferiorly apparently by contact with the ground while the mare was down. To the eye the form of the mammary glands was completely gone and it was almost so to manipulation. The teats were presented at peculiar angles. There was a waxy material on the nipples, blood-stained in the case of the off side one. The pigmented skin of the right groin appeared just below and in front of the stifle and leg, and the disposition of that flank allowed of only limited forward movement of the limb. Manipulation in that area revealed that there was little between the nearest of the abdominal contents—probably gut—and the hand except the very fine skin. The sciatic ligaments were slackened but not sufficiently so to suggest that parturition was imminent, and vaginal exploration revealed a closed *os uteri*. There was a history of the mare having had an attack of abdominal pain about three weeks previously, during which she kept going down and struggled with some violence during the spasms. This passed off after the administration of a draught.

The diagnosis was rupture of the prepubic tendon. The actual limits of the rupture were not, and probably could not be, defined by forcible manipulation.

Subsequently she was kept under close observation. She lost flesh to some extent, the œdema was gradually absorbed, and about a week later it was reported that a quantity of blood-stained fluid had exuded from somewhere about the centre of the abdomen.

About three weeks later assistance was again sought, when she had gone down preparatory to foaling. Although the foal was inclined to be turned on to his back, the parturition was not a very difficult one. Her colt foal was a big one for the size of the dam, and although born alive and living for some hours it never gained its legs. The mare, by the way, had been mated to a colt at grass, and nothing was known as to dates. She was destroyed a week later and the carcase seen after the skin and limbs had been removed. It then presented a striking appearance, as though having a natural window in the floor of the abdomen, and the cæcum was partly protruding through. The rupture was a broad oval in outline, about a foot in breadth and a little more in length, with edges healed and perfectly smooth. It extended from about two-and-a-half inches in front of the pubes forward, its long axis to the right of the middle line. The surface of the abdomen, where there had previously been œdema, was sclerosed, and the mesenteric surfaces of neighbouring intestine showed small discrete roughened areas, probably from the same cause. The last two or three feet of the ileum exhibited considerable thickening in the substance of its walls, probably due to pressure. Some of the mesenteric glands were large and juicy when incised and in some were minute calcifications. One gland that attracted particular notice from its hæmorrhagic appearance when opened resembled scraped raw beef and contained a number of redworms: a dozen were counted. These were considered to be the probable cause of the attack of colic and it is thought that in all probability a rupture, small in extent, occurred at that time at the anterior attachments of the prepubic tendon and that it suddenly increased in extent on the night of June 25th, owing to increasing weight, with perhaps an added cause such as a false step or a kick or threatened kick from another horse.

Appended is a snapshot of the animal taken a few days after foaling.

The Ministry of Agriculture scheme for making payments under the Cattle Industry (Emergency Provisions) Act came into operation on September 1st.

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A Derbyshire farmer and cattle dealer has been fined £20 by Chesterfield magistrates for failing to notify the presence of tuberculosis in a cow of which he was the owner.

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The position of the United Kingdom as the world's largest importer of dairy produce, poultry, and pig products was even more marked in 1933 than in other recent years, according to a survey entitled "Dairy Produce Supplies in 1933," issued by the Imperial Economic Committee.

Abstracts

[Problems of Bang's Disease—Brucellosis. Poppe. (1934.) *Berl. tier. Wschr., 50,* 218.]

Brucellosis is significant as a disease of animals and of man. Amongst cattle, contagious abortion is only second in importance to tuberculosis, about 50 per cent. of all stock in Germany being infected. In the human being, Brucella infection can appear either as Malta fever or as undulant fever. The fact that undulant fever in man is a specific disease caused by *Br. abortus* has only recently been realised. In Germany 626 cases of this infection were reported in 1929-30, 428 in 1930-31 and 498 in 1931-32.

Cattle, pigs, and possibly sheep are the chief carriers of *Br. abortus*. These animals can acquire infection through the skin, conjunctiva, alimentary and genital tracts. In man it is not clear what constitutes the important portal of entry. Since 20 to 50 per cent. of raw milk samples contain this organism, whilst meat and even drinking water may be contaminated, it might be expected that infection in human beings, particularly amongst children, would be very widespread. That this is not the case may possibly be explained by the need for extremely heavy doses of the organism before infection results. An analysis of the distribution of the disease rather supports this idea. Infection is uncommon in children, whilst adults are usually attacked between the ages of 20 and 40 years. Of the 626 cases which occurred in 1929-30, 530 were agriculturalists or workers in the milk industry, 44 were veterinary surgeons and 35 were concerned with the meat trade, whilst 14 were laboratory workers.

From the veterinary standpoint alone there are many arguments against the inoculation of cattle with living vaccines. The fact that human beings are susceptible to infection with *Br. abortus* is an added reason for the complete eradication of the disease instead of control by inoculation measures. E. J. P.

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[Some Cellular Bases for Immune Reactions in Parasitic Infections.* Taliaferro, W. H. (1934.) *Jour. of Parasitology, 20* (3), 149-161.]

Taliaferro notes that the same type of cell is always involved in an animal responding to an invasion, whether it be of protozoan, helminthic or bacterial nature, to immunising processes or to the introduction of sterile foreign substances.

The cells involved are those of blood and connective tissue. Of these cells the polymorphonuclear leucocytes are the first to be mobilised but the macrophages are most directly involved and responsible for most of the work. When necessary small lymphocytes can be transformed into macrophages. In acquired immunity, macrophages are more important and may even produce weak antibodies, due to their greater and more specific activity. In helminthic infections eosinophile leucocytes are always a prominent feature, though as they also occur largely in all cases where foreign proteins are absorbed, it is suggested that they occur under conditions of sensitisation or immunisation of the host by protein antigen, and are associated with the defence against foreign toxic proteins which they may actually absorb. P. A. C.

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[The Life History of *OSTERTAGIA CIRCUMCINCTA.* Threlkeld, W. L. (1934.) Technical Bulletin, Virginia Agric. Exp. Station, No. 52 (Reprint 24 pp.).]

Threlkeld has followed experimentally in lambs the life cycle of *Ostertagia circumcincta*. Seventeen days elapsed from the initial infection to the first appearance of eggs in the fæces.

The eggs hatch within 24 hours. The second stage larvæ develop during the third and fourth days. The infective larvæ appear on the fifth and sixth day. Forty-eight hours after oral introduction the larvæ have ecdysed, sexual differentiation has commenced and by the fourth day practically all the larvæ are coiled deeply within the mucosa of the abomasum, which is highly inflamed, dotted with small elevated areas and characterised by petechial hæmorrhages. On the eighth day the larvæ have reached the fourth and fifth stages within the mucosa. By the ninth day the larvæ have lost their sheaths and exhibit all the characteristics of developing adults. A few gravid adults were found on the fifteenth day. No evidence of migration in the blood stream or tissues was found. Details of the larvæ are given in tabular form and microphotos illustrate the various stages of development. R. T. L.

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[Biological Diagnosis of Trichinosis in Pigs.* (Trans. title.) Trawinski, A. (1934.) *Berl. Tierärztl. Woch.,* L (12), 223-224.]

Trawinski reports excellent results from both the intradermal test and the precipitin reaction in trichinous pigs. He suggests the use of the former in living animals and the latter at the slaughterhouse.

The antigen was prepared from trichinella larvæ, isolated from artificially infected rabbits by digesting the masseters with pepsin and HCl. The unencapsuled larvæ come out into the digesting fluid and are concentrated by centrifuge and repeatedly washed. They are then dried and weighed, and extracted with 1 in 500 NaCl solution. The intradermal reaction in pigs begins in four to eight hours after injection and lasts about 40 hours. The precipitin reaction is consistently positive with pig sera from the

eleventh day of infection, and occurs within 20 minutes to three hours. It was controlled with ascaris and hydatid antigens and by testing the sera of ascaris-infected pigs with trichinella antigen. Trawinski considers that the parallel work of Bachman, Augustine and Theiler is invalidated by their use of Coca's solution in preparing the antigen; he finds that this yields positive precipitin reaction with the sera of healthy animals.

B. G. P.

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[Helminth Parasites observed in a Herd of Goats maintained at St. Albans, England.* Oldham, J. N., and Morgan, D. O. (1934.) *Jour. of Helminthology, 12* (1), 39-46.]

Oldham and Morgan record the helminth parasites found in 80 goats examined over a period of seven years at the Institute of Agricultural Parasitology. Fourteen goats were free from helminths; in the remainder were found one or more species of 17 species of nematodes and two of cestodes. Multiple infections were the rule, more than half of the parasitised goats harbouring four or more species of helminth; four goats harboured no less than nine species each. With the exception of *Trichostrongylus capricola* and *Skrjabinema ovis*, all the recorded helminths are common parasites of sheep or cattle or both.

B. G. P.

**Contributed by the Imperial Bureau of Agricultural Parasitology.*

POULTRY STATISTICS

Figures published by the Ministry of Agriculture show that there has only been a small increase in the number of fowls kept on farms in England and Wales during the past year. The total recorded last June 4th was 61,310,000, compared with 61,170,000 a year before. The number of fowls in the country has shown an increase each year since 1926, but whereas the increase has ranged from 1 per cent. in 1928 to 12 per cent. in 1930, the net increase during the past year is equivalent to only 0·2 per cent. An increase in the numbers of birds over six months old was to a large extent counterbalanced by a decrease in the numbers of those under six months.

"These returns," says the Agricultural Correspondent of *The Times*, "indicate that the rapid expansion of the poultry industry has been checked, and that farmers have not reared so many pullets this year. It should not be overlooked that the reduction in the number of young birds may not be altogether premeditated. The general experience is that this has been a difficult year for rearing, and that losses have been heavier than usual. No doubt more chicks would have been reared if egg prices had been maintained at a profitable level and there was more certainty about the future of the industry. It is not expected that the report of the Reorganisation Commission, sitting under the chairmanship of Dr. Addison, will be completed until the late autumn."

Report

ABATTOIR DESIGN

Report of the Technical Committee

The Report of the Technical Committee on Abattoir Design has been issued by the Ministry of Agriculture. The committee was appointed in December last under the Chairmanship of Sir Francis Boys, K.B.E., to consider and report on the technical requirements as regards output, structure, lay-out and equipment of factory abattoirs in the practice at home and abroad in the processing and handling of meat, offal and by-products.

The committee recommend that to secure the full benefits of factory working, all the operations carried out, from the receipt of the livestock till the dispatch of the meat and other products from the factory abattoir, must be entirely subject to single control.

The charges for slaughtering and decision as to which by-products from the animals slaughtered are to be retained at the factory for treatment are matters for arrangement between the controlling authority and the persons on whose behalf the stock or goods are being treated.

The Principal Characteristics of a Factory Abattoir.—In the committee's opinion these should be as follows: (*a*) single control; (*b*) specialisation of labour; (*c*) continuous process, and (*d*) uniform conditions and appearance of the finished product.

They state that centralisation of slaughtering in itself, irrespective of the type of slaughterhouse adopted, makes for more efficient *ante-* and *post-mortem* inspection of animals than is always possible at present.

The adoption of the factory type of centralised abattoir should, however, also result in the highest possible standard of hygiene throughout, since all the workers employed are under the direct control of the management, which, in turn, would be closely in touch with the local Public Health Authority.

Existing Slaughtering and Processing Practice.—It is sometimes assumed that factory principles are only applicable where large numbers of animals are dealt with, wherever an export trade in meat exists. This, however, does not mean that, under such circumstances, smaller factories are not practicable and do not exist, though overhead charges may tend to be higher than in the larger works. In the United States the factory principle is generally adopted for the internal trade and it is used to some extent in this country. The committee are satisfied that in the case of a number of cities and towns in this country the establishment of a factory abattoir serving in the first instance the urban

area only, would be an economic proposition and could be made to serve the areas surrounding as well.

It is reckoned that less than one-third of the livestock slaughtered is handled in public abattoirs in this country at present.

Of the by-products arising from the small private slaughterhouse, some may be treated efficiently, but generally they do not attain the standard of quality, nor do they command the prices, which they would in factory abattoirs. Probably the nearest approach to the factory abattoir among municipal slaughterhouses in Great Britain is the Edinburgh abattoir.

As regards private establishments, some of the larger Co-operative Societies and a few of the larger private firms have advanced on factory working lines.

In factory abattoirs in other parts of the world practically every kind of by-product is handled by the authority controlling the factory. Arrangements could be made to deal with these processes in this country to economic advantage.

Output.—The committee have come to the conclusion that while most of the by-products could be worked up to advantage on a throughput of about 200 cattle per week, the average minimum slaughter in the case of the establishments working on full factory principles which they recommend, should normally be 320 beasts per week, with other classes of stock in proportion, which would serve a district with a population of 260,000.

There are, however, some isolated urban areas, the local requirements of which are not great. Though it may be possible that in such areas, if slaughtering were centralised, some factory principles might be adopted, the output would be too small to justify full factory working.

Structure.—The committee's preference lies with a multi-floor factory abattoir to that of a single floor. They state that it would be impossible to design a standard factory abattoir suitable for adoption in every locality, owing to variations in site, the relative popularity of different classes of meat, etc., but two diagrams are included in the report, of the single- and multi-floor types of factory abattoir, which they consider might usefully serve the purpose. Their reasons for preferring a multi-floor factory to a single-floor are:—

(1) It is impracticable to work on a factory line in a single floor, catering for cattle, sheep and pigs, owing to the fact that the by-products have to cross the line of the meat and red offals, passing from the slaughterhalls to the coolers.

(2) It is impossible to get the various offals away quickly from the slaughterhalls of a single-floor factory abattoir.

(3) It is of the utmost importance, from the point of view both of public health and of the avoidance of monetary loss, that all offals should be removed from the slaughterhalls immediately.

(4) As some of the by-products processes require two floors, the full advantages of the use of gravity should be taken. The quickest and cleanest way of removal is by chute to a sorting floor below and hence to their respective departments. This can only be attained by placing the slaughterhalls at least above the two floors required by those processes.

Other constructions recommended are given under this section.

Lay-out and Equipment.—This section is the largest in the report and each part of the accommodation is dealt with separately, such as lairage, slaughterhalls, coolers, market hall, offal sorting floor, by-products departments, offices and accommodation for employees, boiler houses and engine rooms, and miscellaneous provision.

Under this section there is provision made for inspection, as follows: "Adequate facilities must be provided for the inspection of all animals entering the abattoir premises and for the inspection of all carcases and organs." Facilities for the latter should include examination tables adjacent to the slaughterhalls and a suitably situated and assigned detention room, with adjoining laboratory and office accommodation. No offal of any kind would leave the slaughterhalls unless passed by the inspectors. If not passed by them as fit for food it would be sent to the inedible offal by-products plant or otherwise dealt with as they might direct. Provision is also made for an isolation block for dealing with diseased animals. The question of cleanliness in the establishment is stressed throughout the report. The importance of this precaution, in the interests of public health and the welfare of the meat trade itself, cannot be over-estimated, as there is a great risk of micro-organisms in large numbers being transferred to the carcases during the period between the slaughter of the animals and the setting of the meat, if hygienic methods are not adopted, particularly in the slaughtering operations.

Larger and Smaller Factory Abattoirs.—The committee consider a throughput of anything less than 50 cattle per day, with other classes of stock in proportion, to be below that which they regard as the standard for a factory abattoir, and under their terms of reference have not considered themselves called upon to make detailed suggestions as to the type of abattoir most suitable in these cases.

The capacity of a factory abattoir for dealing with a larger number of animals than

designed would not need to be increased proportionately to the number of animals to be handled, with the exception of the lairage and cooling accommodation.

Summary.—The references in this section relate to previous sections of the report.

Concluding Observations. — The committee state that they have endeavoured to adapt what is best in both home and overseas practice and express the belief that their recommendations would be workable immediately and embody principles which would bring better realisation values for the raw materials of the industry and at the same time eliminate waste.

They consider that one of the most difficult problems in connection with a factory abattoir scheme would be that of fixing the prices to be paid by the management for the various by-products retained and that if these prices were a matter for settlement as between a local authority and numerous suppliers, it might be a serious handicap to the smooth running and efficiency of the factory abattoirs.

They express the opinion that these difficulties will no doubt receive the full consideration of H.M. Government in arriving at decisions on future policy as to slaughtering, but it seems to them that the premises other than the market might be leased to a slaughtering or by-products company or association formed from the trade. Such a body might be established on a service basis; the local authority would thus be relieved of much detail work and yet could reserve to itself the right of supervision in order to ensure the maintenance of the open door policy and the impartial service of a municipally-controlled abattoir, in addition to its statutory duty of health inspection.

Acknowledgments.—The committee express their indebtedness to numerous individuals and bodies interested in various aspects of their task.

Appendix A deals with the conditioning and refrigeration of meat.

Appendix B deals with the spaces required by the by-products, plants for factory abattoirs, handling various average daily kills.

The report is a most interesting publication and the committee have carried out a difficult task. Those of us who have experience in public abattoirs can hardly fail to agree that the recommendation in the report, if adopted, would be the best solution of the unsatisfactory supervision of private slaughterhouses which exists to-day, and at the same time offers to the farmers and the meat trade economic advantages in the manufacture of by-products by facilitating the collection of glands, blood and inedible offal, etc., and reduction in the cost of collection of all non-edible material.

The suggestion offered that the meat trade or other interested companies might be allowed to lease the premises on certain conditions in order that the system of single control and specialisation of labour, etc., might be adopted, is sound, as it would create an added interest to those concerned. It should now be possible for local authorities to proceed with an abattoir undertaking and the formation of a controlling authority with more confidence. W. T.

N.V.M.A. Divisional Report

DERBYSHIRE V.M.A.*

DEMONSTRATIONS AT DERBY

A company of members and visitors met at London Road Stables, L.M.S. Railway, Derby, on Wednesday, July 4th, 1934, where a number of demonstrations were given.

There were present:—Major P. Abson (President), Messrs. L. A. Auchterlonie, H. S. Cockburn, F. A. Davidson, G. Durrant, J. Edwardson, G. Eaton, O. V. Gunning, R. S. Howe, E. Marrison, H. W. Steele Bodger, H. L. Torrance, E. Wilkinson, and W. J. Ironside (Hon. Secretary). Messrs. W. E. Blackwell, W. L. Dwerryhouse were present as visitors.

Demonstrations

Operation for quittor.—This operation was to have been performed by the President, but the four cases from which one was to have been selected had so far recovered under Mr. Wilkinson's treatment that an operation was not justified. The four cases referred to were brought out for inspection.

Lameness diagnosis.—Under the direction of Mr. Wilkinson ten cases were paraded for examination and the company were asked to make notes of cases for purposes of discussion.

Local anæsthesia was induced in two of the cases—in one by Mr. Auchterlonie, who injected the anæsthetic in the high position; in the other by Mr. Steele Bodger, who used the low position. In this case the animal was lame in both fore feet and the induction of anæsthesia in one resulted in a marked increase in the degree of lameness in the other. This afforded an excellent demonstration of the degree of pain actually present in both feet.

At the subsequent discussion very little difference of opinion was voiced.

In one case, in which a diagnosis of keratoma was given a question as to treatment was raised. This was replied to by the President, who said that success in treatment depended upon careful and complete removal.

In another case, in which Mr. Wilkinson gave a tentative diagnosis of shoulder lameness, Mr. Howe expressed the opinion that the case was one of partial radial paralysis.

*Received for publication August 21st.

With reference to one in which the diagnosis was sesamoiditis, Capt. Gunning said he thought that improper preparation of the foot at shoeing played an important part in the causation of this and of many other troubles of the foot itself. He said he had had good results in foot cases following opening of the foot to allow of expansion, and mentioned two operations of which he made use for that purpose.

Intravenous injection.—Mr. Wilkinson demonstrated his technique of this process and in his remarks said that his use of the method was limited to the injection of a solution of formalin in the treatment of purpura hæmorrhagica. He had only applied this treatment in some dozen cases, but had had success in each case.

Examination of the eye.—Capt. Gunning demonstrated the use of the ophthalmoscope for this purpose and stated that he found it of great value.

Business Meeting

Following the demonstrations the company took tea together and a meeting was then held, with the President in the chair.

The minutes of last meeting, having been published in *The Veterinary Record*, were taken as read and signed.

Election of new members.—Mr. G. Durrant and Mr. F. A. Davidson were elected to membership of the Society.

Votes of thanks.—On the proposal of Mr. Wilkinson a vote of thanks was accorded to the L.M.S. Railway for granting the facilities that had made the demonstrations possible.

Mr. Wilkinson was himself accorded a hearty vote of thanks for the trouble he had taken in making all the arrangements.

This concluded the meeting.

W. J. Ironside, *Hon. Secretary.*

CLEANLINESS OF MILK

In the course of a pamphlet recently issued by the Milk Marketing Board on the subject of the scheme to establish a roll of accredited producers, it is stated: "It must not be instilled into the public mind that a guarantee of cleanliness is a luxury which they must finance. If the consumer is asked to pay more for accredited milk he will buy less, and harbour suspicions of milk which is non-accredited. Therefore, if the new standard is to lead the drive to increase sales on the liquid market, producers themselves must do their part in providing the service."

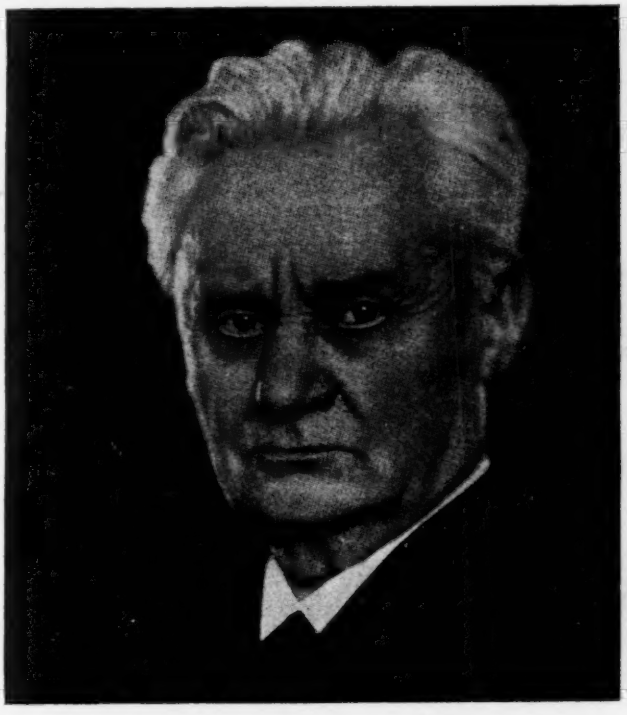
The Board intends to raise a central fund by means of a small levy on all milk produced. From this fund accredited producers will be paid their bonuses.

The pamphlet adds: "Many counties, conscious of the fact that public safeguards are the responsibility of health authorities, have for years prosecuted a campaign among farmers by the appointment of full-time veterinary and advisory staffs. They have also carried on laboratory work, and by the middle of November the Board hopes to hear that every authority concerned will collaborate in the industry's great purity campaign."

CARL OLUF JENSEN, 1864-1934

A Great Pioneer in Veterinary Research

With deep regret we announced in our preceding number the death on Monday, September 3rd, of C. O. Jensen, the distinguished Danish veterinary scientist. He was born on March 18th, 1864, and so it came that his 70th birthday was celebrated a few months ago by the publication of tributes to his life-work in the continental periodicals and the issue of a special commemoration number of one of the first-class journals (*Acta pathologica et microbiologica Scandinavica*, 1934, Supp. 18), with original articles and notices contributed by his pupils and friends. The references to him conveyed the assurance that he was in robust health and enthusiastic over his return to laboratory work after



Prof. Dr. Carl Oluf Jensen

his retirement last year from the duties of Director of the Danish Civil Veterinary Service, which post he had filled since 1922 in succession to his illustrious mentor, the late Professor Bernhard Bang. A short summary of the papers dealing with his lifework was in course of preparation for publication in *The Veterinary Record*, when the report of his death was unexpectedly received.

Ostertag, who differed from him in age by only a few days and was his close friend and admirer of many years' standing, tells us that Jensen was the first veterinary surgeon to specialise in bacteriological research. However, this statement does not seem to tally strictly with what has been recorded, notably, of the early career of the brilliant French veterinarian, Nocard (1850-1903).

So far as we can ascertain (from the orations

delivered by Roux and Leclainche in 1906 at the unveiling of the memorial to him), Nocard, who was then acquiring considerable repute as a young professor of surgery at Alfort, was introduced to Pasteur in his laboratory by Roux in 1878, and having become deeply imbued with Pasteur's ideas was working with the greatest enthusiasm in his laboratory in the *rue d'Ulm* from 1880 onwards. In 1883, he was selected by Pasteur as a member of the fateful mission, comprising also Roux, Straus, and Thuillier, despatched by the French government to Egypt to study Asiatic cholera by bacteriological methods.

Jensen's early history so far as we can gather from published records is that, having completed his course of veterinary training at the Royal Veterinary and Agricultural High School, Copenhagen, in 1882, at the early age of 18, Jensen started as a country veterinary practitioner, at Nimtoft, Jutland, but a breakdown in health brought him back to Copenhagen. Here, by good fortune, he came in contact with a highly talented man, Professor C. J. Salomonsen, who had become deeply interested in the methods of the new science of bacteriology after visiting Pasteur and Koch, and having become restored to health, Jensen became engrossed in the work carried on in Salomonsen's laboratory until 1885. Meanwhile, Professor B. Bang, after a medical education, had begun, in 1890, his remarkable career as professor of pathology in the Copenhagen veterinary school, and Jensen joined him as a private assistant in 1884. With another veterinarian on the staff of the school, G. Sand, he published his first paper in 1886, at the age of 22, on the subject of malignant œdema —a foretaste of his later well-known work on the etiology of *bradsot*. In 1887, he wrote another paper with Sand on the etiology of strangles, confirming the presence of a streptococcus in the lesions as had already been reported by Schütz in Germany and Poels in Holland. Again during this early period with Bang, Jensen described the cause of rancidity in butter caused by *Bacillus fœtidus lactis*, and the mode of preventing it by pasteurisation of the milk and adding pure cultures as butter "starters."

In 1889, at Bang's instigation, Jensen was appointed to a specially created post on the staff of the veterinary school, embracing the teaching of general pathology, pathological anatomy, and *post-mortem* work, and charge of the small animal clinic—a sort of "maid-of-all-work" occupation to which, according to Ostertag, young men wishing to pursue the new methods of research were relegated at that time in the continental veterinary schools. However, in this post, which was raised to the dignity of a professorship in 1903, Jensen found scope for his most exceptional industry. In the first year of his appointment, he founded and edited jointly with the Principal of the school, Professor Steffen Friis, the monthly journal for Danish veterinary surgeons (*Maanedsskrift for Dyrlaeger*) on which he remained joint editor until his death, when it had reached its 45th year of publication. Next year, he added to his ordinary teaching a course in meat and milk hygiene. In the latter subject, he conducted a special course from 1899 onwards, and in 1903 published his well-known book "The Essentials of Milk Hygiene" upon it, which was translated in 1907 into English. Again, a large volume of research work into the infectious diseases of farm stock was carried out by him during this time. The most comprehensive work of his career, on the diseases of calfhood, their identification and differentiation by bacteriological methods, was commenced in 1890, his first paper on the subject appearing in 1892. Work upon the bacteria most commonly isolated from calves with alimentary disorders as also upon the bacterium usually found in outbreaks of swine fever caused him to prosecute pioneer research work in the laboratory upon the separation of the various members of the colon-typhoid group of bacteria, the fermentation and other tests now in current use having been first described by him in 1897. In 1892, he reported upon the etiology of equine botryomycosis, and again he was among the early workers on swine erysipelas, an important finding being the discovery of the bacilli of this disease in the tonsils of apparently normal swine. *Bradsot*, the name given to a disease which was the cause of formidable losses among sheep in Iceland, the Faroë Islands, and north-west Norway, and is apparently identical with Scottish braxy, was very well investigated by him (1897), having in mind the facilities available at the time for the isolation and cultivation of the spore-bearing anærobes, and vaccine was prepared on the same lines as were then followed in making blackquarter vaccine for preventive inoculation, which has since been employed annually on a large scale in the affected countries. Work upon human and bovine tuberculosis, and the responsibility of the bovine type of infection for disease in the human subject, was carried out by him conjointly with J. Fibiger, professor of pathology at the medical school of the University of Copenhagen from 1902 to 1906.

During this period he also carried out his classical researches upon the transplantation of spontaneous malignant new growths in mice and rats. His first paper, published in 1901, described the transplantation of a naturally occurring mouse carcinoma for eight passages, and a later fully illustrated paper in 1903 described 22 successful passages with the same tumour. This work was rapidly confirmed in other laboratories with Jensen's tumour material. Later, in 1907, he further described successful transplantation of a naturally occurring rat sarcoma and this neoplasm has since found its way also into almost all laboratories engaged in cancer research. The discovery by Jensen of the transplantability of mammalian neoplasms, among members of the species in which they are naturally found ranks as one of the three or four fundamental discoveries in modern cancer research. The

work stimulated the important discovery soon afterwards by Jensen's neighbour, Fibiger, in Copenhagen of the production of carcinoma in rats that had fed on cockroaches infested with the larvæ of a spiropterous worm. From 1910 to 1916, Jensen continued his cancer studies by investigating the production of certain tumour growths—the so-called "crown-galls" of Erwin F. Smith—in plants, the primary development of which seems to be associated with bacterial infection.

Emulating Salomonsen's enterprise in setting up a State Serum Laboratory, for the production of sera against diphtheria and tetanus in the human subject, Jensen approached his government in 1904 to build a corresponding institute for veterinary purposes, and in 1905 the Danish legislature voted funds for the erection of a Serum Laboratory attached to the Royal Veterinary and Agriculture High School. This building was completed in 1908, and in 1909 Jensen became Director, and abandoned his teaching duties at the school. At that time, much was hoped by some people from the exploitation of sera and vaccines, and public bodies were being pressed to establish well-equipped institutes for this purpose, persuaded of an amply remunerative return for their expenditure. However, as Ostertag maintains, Jensen was under no illusion on this score, being convinced that thorough work into the etiology of a disease was the first step towards its successful control. During the 25 years that have elapsed since the opening of this laboratory, it has been most prolific in its output of original papers dealing with a wide range of animal diseases, the number published amounting to 137 early this year, at the time of Jensen's birthday celebrations. These papers, contributed by Jensen and his colleagues (V. Adsersen, C. W. Andersen, L. Bahr, M. Christiansen, H. Holth, E. Mejlbo, N. Plum, H. O. Schmit-Jensen, A. Thomsen) have provided most invaluable additions to our knowledge particularly upon the diseases of agricultural breeding stock and of the new-born (such as white scour in calves and joint-ill in foals). Many aspects of contagious abortion have been studied, including infection of man with the causal organism. Important new information has been added upon tuberculosis, such as the production of lesions in pigs by the avian type of tubercle bacillus and the rôle of this type also in the infection of cattle, sometimes with the induction of abortion. The various diseases of pigs, including snuffles and certain nutritional anæmias, and the diagnosis of certain common fowl diseases have also been taken in hand together with miscellaneous problems, such as the standardisation of thyroid extracts. Recently, the laboratory has been taken over for direct control under the Ministry of Agriculture, as the "State Veterinary Serum Laboratory."

The period 1922-1933, during which Jensen was at the head of the Danish Civil Veterinary Service was marked during its early part with severe and extensive outbreaks of foot-and-mouth disease in Denmark, and the work of control occupied the greater part of his time so that he had to relinquish his interests largely in laboratory work. Research, into this disease and the production of a convalescent serum for protective inoculation were carried out in a station specially erected on the island of Lindholm, in the Baltic, following upon the German example. Jensen had been a member of the State veterinary health board since 1896.

Ostertag quotes some learned man as having said that a research worker is destined to make only *one* real discovery. Then he says that if he were asked in acknowledging this seemingly absurd proposition to mention what had been Jensen's outstanding contribution to the advancement of knoweldge, he would say at once that it was the work he and his pupils had carried out upon calf diseases. This work is remarkable for the persistence and thoroughness with which precise results directed to the interests of the agriculturists have been amassed by the careful study of an extensive material during a period of 43 years. In the last instalment of results, contained in a paper written by H. Meijlbo, an analysis is given of the examination of 5,129 cases from December, 1921 to April, 1933. Other veterinarians might think that Jensen's work on *bradsot* was of the highest order. Undoubtedly, however, the great majority of workers employed in research into disease in laboratories would account his work on cancer as the contribution which has earned him enduring renown, probably without reflecting that his striking discoveries upon cancer were largely incidental to a career spent in the indefatigable pursuit of solutions to problems in veterinary science.

In our preliminary announcement, it was mentioned that Jensen was made an Honorary Associate of the R.C.V.S. in 1914. He was elected as Doctor of Medicine, *honoris causa*, of the University of Copenhagen in 1910. He had been a member of the Royal Danish Academy since 1903, and had been honoured by several learned Societies abroad. He had contributed authoritative articles on a number of animal diseases to the well-known German compendiums—Kolle-Wassermann, Lubarsch-Ostertag, and Klimmer-Wolff Eisner.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

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DIARY OF EVENTS

Sept. 17th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4.30 p.m.

Sept. 22nd.—Meeting of the North of England Division, N.V.M.A., at Newcastle-on-Tyne.

Sept. 26th.—Meeting of the Lancashire Division, N.V.M.A., at Manchester.

Oct. 1st.—N.V.M.A. Committee Meetings, 2, Verulam Buildings, Gray's Inn, W.C.1.

Oct. 2nd.—N.V.M.A. Council Meeting, Conway Hall, Red Lion Square, W.C.1.

Oct. 3rd.—R.C.V.S. Committee Meetings.

Oct. 4th.—R.C.V.S. Committee Meetings. Victoria Veterinary Benevolent Fund Council Meeting.

Oct. 5th.—R.C.V.S. Committee and Council Meetings.

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PERSONAL

Mr. J. Martin's Half-century in Wellington

Under the above heading, the *Wellington Journal* of September 1st publishes an appreciation of Mr. James Martin, M.R.C.V.S., who on that date completed his fiftieth year as a veterinary surgeon at that Shropshire town. This, as the

Journal says, is a record of which Mr. Martin may justly be proud, while, in addition to his professional duties, he takes a lively interest in local government, being first elected a member of Wellington Urban Council in 1898.

Mr. Martin started practice in Wellington two years after qualifying at Glasgow in 1882—"That he is devoted to his work is well known all over the county, in which he is held in the highest esteem."

The *Journal* proceeds: "He has also two veterinary surgeon sons—Mr. Jim Martin, who is in practice at Newport, and Mr. Tom Martin, who is with his father. A son-in-law, Major Frank Chambers, is in similar practice in Wolverhampton. Mr. Martin has been connected with the Midland Counties Veterinary Medical Association practically ever since he came to Wellington, and has occupied the position of President. He has also regularly attended the National Veterinary Medical Association Congress.

"For years Mr. Martin has been a very popular official at various agricultural and canine shows in the county, and figured in the list of veterinary surgeons at the Royal Show when it was held at Shrewsbury in 1914. He has always taken a keen interest in the Wellington Canine Show, in the formation of which he was one of the prime movers. At one time he was a noted breeder of fox-terriers and Sealyhams, and is particularly devoted to working terriers.

"Up to three years ago, when he met with an accident, Mr. Martin was a keen follower to hounds. He hunted with the North and South Shropshire, the Albrighton and Wheatland hunts, and on many occasions in his early days of fox-hunting he rode home in the saddle from distances as far away as Brewood.

Public Service

"Last, but by no means least, comes Mr. Martin's public service. With the exception of a break during the war period, he has been a member of Wellington Urban Council since 1898. He occupied the position of Chairman of that authority from 1903 to 1905, and later from 1927 to 1929. He has also been Chairman of all the committees, with the exception of the Finance Committee. Many changes and developments have taken place since he was first elected. The population has increased from about 5,000 to 8,000, and latterly building operations have developed to a remarkable degree. Mr. Martin has always adopted a progressive policy consistent with economy, and he is held in the highest respect by his Councillor colleagues and officials, as well as by the general body of ratepayers.

"When the Alexandra Rose Day collections were formed, Mr. Martin became Chairman of the Wellington organisation—a position he held until this year.

"All wish him many more years of useful service."

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Appointments.—At a meeting of Banffshire County Council Public Health Committee held on September 3rd, Mr. W. M. M'Kay, St. Alban's Road, Edinburgh, was appointed County Veterinary Inspector in succession to Mr. Robert Davidson, who has received an appointment in Berkshire.

Mr. M'Kay, who is a native of Edinburgh, formerly held the position of Veterinary Officer under the Government in Kenya.

Mr. H. M. Salusbury, M.R.C.V.S., D.V.H., has been appointed Assistant Veterinary Officer to the City of Sheffield.

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Marriages.—Loveday—Gresham.—On September 3rd, 1934, at St. Giles', Balderton, by Rev. Canon R. F. Gould, assisted by Rev. F. Morton, Reginald Montague, son of Mr. and Mrs. Arthur Loveday, North Collingham, to Gurling Elfreda, daughter of Major and Mrs. F. B. Gresham, Hill View, New Balderton.

Oliver—King.—At All Saints' Church, Lanchester, on September 5th, by the Rev. L. Heatherington, George Milne Grieve Oliver, M.R.C.V.S., son of Dr. and Mrs. Oliver, Pelton Fell, to Winifred, daughter of Mrs. King. The bride was given away by her uncle, Mr. T. Wilkinson, M.R.C.V.S., a reception afterwards being held at Greystones, Lanchester, when over 100 guests were entertained, at which the Profession was well represented.

Purchase—Cooper.—On September 2nd, at All Saints' Church, St. Ives, Ringwood, Hants, Harvey Spurgeon Purchase, B.Sc., F.R.C.V.S., and Vera Margaret Cooper.

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ARMY VETERINARY SERVICE

London Gazette—War Office—Regular Army

September 1st.—Lt. (on. prob.) L. R. Morford resigns his commn. (September 1st).

September 7th. The following Lts. (on prob.) are confirmed in their rank:—D. F. G. Smith, R. S. T. Bowden, A. D. Seton, I. H. Chalmers.

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R.C.V.S. OBITUARY

Anderson, Samuel. Veterinary Officer, Zomba, Nyasaland. Graduated Dublin, July 13th, 1918; died September 3rd, 1934, aged 38 years.

Matthews, Richard Charles. East Grinstead. Graduated London, September 19th, 1908; died September 4th, 1934, aged 52 years.

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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DATURA STRAMONIUM

(Thorn Apple)

To the Editor of The Veterinary Record

Sir,—Further to the article on Datura Stramonium, Carnevin, page 468, states that a horse having received a potion containing 122 grammes showed for 6/7 hours symptoms of intoxication but recovered. He further states that the disagreeable smell of this plant is repugnant to livestock.

I might further mention that the leaves are often used by herbalists as asthma cures under the guise of cigarettes.

Yours faithfully,

G. A. Tomlin.

Hasketon,
near Woodbridge,
Suffolk.
September 10th, 1934.